

an absolute synonym of *lewisii*, on the other hand, in view of the well-known variation of the species of this genus in the different rivers of the Alabama system, it is quite possible that it may be varietally or even specifically distinct. Its final position in the system must necessarily await its re-discovery in sufficient quantity to enable its standing to be definitely determined. If its accidental page priority were to be recognized, it would leave the specific type a matter of uncertainty for an indefinite period.

3. By adopting *lewisii* as the specific name, Dr. Lea's intention to perpetuate the memory of one of the leading conchologists of his time will be effective.

In view of these considerations and assuming the two forms to be synonymous, I select *Unio lewisii* Lea as the specific type.

The synonymy, therefore, would be as follows:

PLEUROBEMA LEWISII (Lea).

1861. *Unio lewisii* Lea, Pr. Ac. Nat. Sci. Phila., p. 40.  
 1862. *Unio lewisii* Lea, Jl. Ac. Nat. Sci. Phila., v, p. 71, pl. vii, fig. 220; Obs., viii, p. 75, pl. viii, fig. 220.  
 1861. ? *Unio crapulus* Lea, Pr. Ac. Nat. Sci. Phila., p. 39.  
 1866. ? *Unio crapulus* Lea, Jl. Ac. Nat. Sci. vi, p. 42, pl. xv, fig. 40.  
 1867. ? *Unio crapulus* Lea, Obs., xi, p. 46, pl. xv, fig. 40.  
 1900. *Pleurobema cor* Simpson, Syn., p. 754 (not of Conrad).  
 1914. *Pleurobema cor* Simpson, Desc. Cat., p. 765 (not of Conrad).

NOTE.—The foregoing article was received before the publication of that on *U. cor* in the January number. Most of the matter relating to *cor* has therefore been eliminated.—EDS.

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ANODONTA DANIELSI LEA IN COLORADO.

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BY MAX M. ELLIS.

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While collecting fishes during October in Black Wolf Creek, a tributary of the Arikaree River in eastern Colorado, a large, isolated colony of bivalves was discovered, specimens from

which have been identified by Mr. Bryant Walker as *Anodonta danielsi* Lea. This collection constitutes the first record of this species from Colorado. The only other species of *Anodonta* known to occur in Colorado is *Anodonta grandis*, listed from two localities, Lodgepole Creek in the extreme northeastern corner of the state and a reservoir about 30 miles north of Denver. (Henderson, Mollusca Colo. 1912).

The stream, Black Wolf Creek, is a small, rapid, spring-fed brook, about seven miles long and averaging two feet wide during low water. It joins the Arikaree River about eight miles from the Colorado-Nebraska line. As the Arikaree River frequently goes dry in Colorado during the summer months, Black Wolf Creek which carries water throughout the year from its small springs, is left an isolated unit during these dry seasons. The bottom of this stream is coarse sand or fine gravel except in the backwaters upstream from the two artificial dams which have been placed across the stream to deflect water for irrigation purposes. Back of each of these dams the stream widens to 20 feet or more for a distance of several hundred yards, in which portions of the stream the water averages four feet in depth. In this quiet water the fine blue clay carried by the stream has been deposited on the bottom in a compact layer about 20 inches thick.

The colony *Anodonta danielsi* was found in the deep water back of the upper dam on Black Wolf Creek, which is located about two and one-half miles north and a little west of the Indian battleground known as Beecher's Island. This dam is little more than a low mud wall and it has not increased materially the depth of the water in a naturally deeper portion of the stream. This fact together with the finding of large numbers of broken shells on and in the banks of the stream where they had been carried by mammals, and the absence of shells in the deep water back of the lower dam (a more elaborate wall which has changed the water-level back of it) suggests that the colony found has been established for a long time. The individuals were very abundant, often six or more large adults occurring in a space a foot square. Each shell was securely buried in the dense blue clay so that a rather strong pull was required to

loosen it, and the projecting siphonal portion was usually covered with soft silt.

The one hundred specimens collected at random from this colony were very uniform in size. A typical shell has the following measurements: length, 140 mm.; height from margin to hinge, 80 mm.; diameter, 55 mm.; thickness of the individual valve, 2 mm. A comparison of these measurements with those given by Simpson (Cat. p. 428, 1914) for this species shows the average Colorado specimen to be almost one-half longer than specimens from the type locality, Topeka, Kansas. Moreover, a few shells from Black Wolf Creek are 180 mm. long. Only a few juvenile specimens were found, the smallest of these measuring 70 mm. in length. These small specimens are of a brilliant green color and have a more or less definite pattern of rays. The adult shells were a rich, pitchy black when first taken from the water and as dried and cleaned specimens they have a polished or varnished appearance. The umbonal half of each valve is black or greenish black, and the marginal half a bistre brown, the color transition between the two portions of the shell being rather abrupt. The soft parts of the adults were also highly colored, among the individuals collected two forms not correlated with sex, were evident: a bright salmon-pink type and a dull chocolate-brown type.

While cleaning the shells it was noted that most of the females were distended with eggs. Many shells contained large irregular pearls, several of which were at least 15 mm. in length. These pearls were invariably irregular and more or less attached to the shell. Although their lustre was excellent, showing a good deposit of lime, they were very frail. Several were opened and found to contain masses of blue clay like that in which the mussels themselves were found. Ranchers living along Black Wolf Creek told of several freshets during the past three years which swept out numbers of shells from the deep water back of dam. It is possible that these mud pearls may have been caused by the sudden introduction of mud into the shells during these floods.

It may be added that there is a large specimen of *Anodonta* in the Museum of the University of Colorado marked *Anodonta*

*grandis*, which is one of a few collected about 30 miles north of Denver. This shell, which is 160 mm. long and 100 mm. high, and the specimens from Black Wolf Creek were compared, as *Anodonta danielsi* is a member of the *Anodonta grandis* group. The oral end of this *Anodonta grandis* is rather abruptly truncated, the same portion of the eastern Colorado shells being broadly rounded; the umbonal region is reddish brown shading to almost black along the margin of the valve, the shell as a whole lacking the greenish cast so evident in the specimens from Black Wolf Creek; and the *Anodonta grandis* shell is more inflated and broader than the others. The umbonal sculpture of this *Anodonta grandis* and of the *Anodonta danielsi* from Black Wolf Creek seemed identical, and the contour of the siphonal end of each valve is the same for both species.

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NOTES.

APPETITE OF EUGLANDINA.—M. L. Vignal gives an interesting account of the behavior of *Glandina guttata* C. & F. from Mexico kept alive and under observation for some time (Bull. Soc. Nat. d'Acclimatation, Nov. 1915, pp. 344-349). Ordinarily a large *Glandina* ate an adult *Helix aspersa* every 2 or 3 days. Between June 6 and Aug. 28 (1911) it devoured 28 *Helix aspersa*, weighing, without the shell 121 grams (about 65½ ozs.) Five *Glandinas* ate 102 *Helix variabilis* and 7 *H. nemoralis* in 17 days, an average of over 6 per day for the five.

NOTE ON CÆCILIOIDES.—In 1907 the writer proposed a group *Cæcilianopsis* to include the very small *Cæcilioides* of tropical America, *C. iota* (C. B. Ad.), *C. consobrina* (Orb.) and their varieties (See Manual of Conchology XX, p. 38). Not expecting to find a land snail in a book dealing with marines, I overlooked the publication by De Folin of *Karolus primus*, a minute shell found at Vera Cruz (Les Fonds de la Mer I, p. 182, 189,